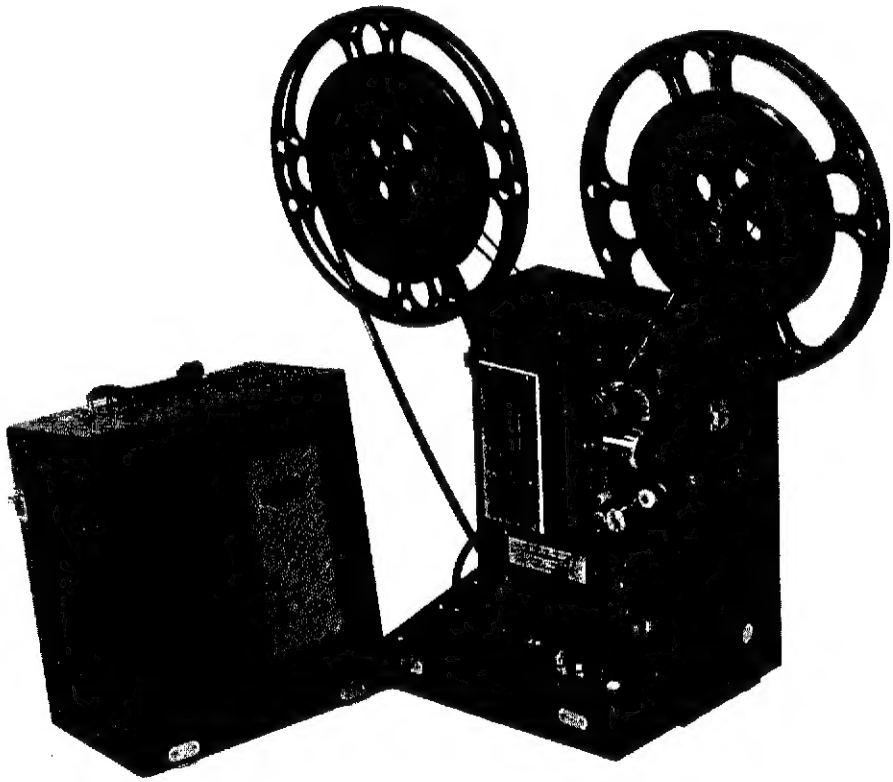
APRIL 1963 NO. 768376

Servicing the

Kodak Pageant Sound Projector, Model AV-126-TR



EASTMAN KODAK COMPANY
Apparatus Service Department
ROCHESTER 4, NEW YORK

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1. GENERAL SPECIFICATIONS

1.1 ELECTRICAL

Power service required: 105 to 125 volt, 60 cycle ac only

Power consumed: with 750 watt lamp - 950 watts
with 1000 watt lamp - 1200 watts
with 1200 watt lamp - 1400 watts

Projection lamps: 750 watt, ASA Code DDB
1000 watt, ASA Code DFD
1200 watt, ASA Code DHT

1.2 MECHANISM

Claw protrusion: .030" - .045" (Section 5.18.3).
Pull-through tension: 1½ - 2½ ounces (Section 5.3.4).
Side guide tension: 1 - 1½ ounces (Section 5.3.2).
Flywheel torque: 3 - 4½ ounce-inches (Section 5.15.3).
Pressure roller tension: 12 - 18 ounces.
Shutter shaft RPM, Sound Speed: 1440 ± 75
Shutter shaft RPM, Silent Speed: between 1020 and 1140

1.3 SOUND SYSTEM

Transistors: 5-2N109 or 2N1370, 2-2N307 or T1-370, 1-2N35 or 2N1304
Exciter lamp: 6 volt 1.0 ampere, ASA Code BSK
Input impedances: Microphone, 5,000 ohms; Phono, 0.5 megohms
Output impedance: 6 ohms
Frequency response: 30 to 20,000 cycles ± 3 db

2. SERVICE HINTS WITH SUGGESTED CHECK POINTS

2.1 MECHANISM

Projector will not run forward

Motor drive pulley belt slippage caused by oil on belt.
Clean oil off pulleys and replace belt.
Direction shifting adjustment (Section 5.22.5).
Shutter drive belt slippage.

Projector will not run in reverse

Motor drive pulley slippage caused by oil on rubber drive. Replace pulley.
Direction shifting adjustment (Section 5.22.5).
Shutter drive belt slippage.

Speed shifting operates improperly

Speed shifting adjustment (Section 5.22.3).
Speed shifting lever assembly (Section 5.22). If Type I, II, or III as described in Section 5.17 - replace parts as described.

Supply spindle binds - "A" serial number projectors

Replace complete supply reel arm assembly with late style #160722.

Streaks on screen - no film in projector

Projection lamp seating and adjustments (Section 5.29.1).
Condenser mount assembly.
Reflector.

Picture does not focus properly

Free movement of projection lens field flattener element.
Alignment of the aperture plate and pressure pad assembly (Section 5.3.2).

Picture cannot be framed properly

Stripped threads on framing shaft.
Framing shaft retaining ring missing.

Picture unsteady

Claw clearance in aperture plate slot (Section 5.3.4).
Pull-through tension (Section 5.3.4).
Free movement of side guides.
Side guide pressure (Section 5.3.2).
Cam follower.
Shutter shaft ball bearing.

Projector loses lower loop and tears film perforations

Claw clearance in aperture plate slot (Section 5.3.4).
Claw protrusion (Section 5.18.3).
Alignment of pressure pad rails with aperture plate rails (Section 5.3.2).
Pull-through tension (Section 5.3.4).
Sound drum pressure roller tension (Section 5.16.3).
In-and-out cam wear.
Cam follower wear.

Breaks splices

Condition of splices.
Excessive amount of pull-through tension (Section 5.3.4).
Sprocket clamp adjustment (Section 5.7.3 upper; Section 5.8.3 lower).

Does not take-up film

Take-up pulley pawl binds (Section 5.25.1).
Take-up belt.

Super-40 shutter fails to shift or shifts slowly

Locking lever action.
Blades bind (Section 5.19.2).
Shutter weight return spring tension.

Take-up (rear) reel spills film while projector is running in reverse

Take-up pulley assembly binds (Section 5.25.1).
Clean and lubricate the pulley pawl.

Spills film off supply (front) reel while projector is running in reverse

Supply spindle torque. Correct torque is between 7 and 14 ounce-inches. If torque is low, replace the tension adjusting spring #131363.

Film does not stay on sound drum when projector is running in reverse

Damping roller arm adjustment (Section 5.9.3).

Rewind does not function

Rewind belt.
Rewind mechanism.
Take-up and rewind spindles bind.
"A" serial number projectors - replace complete supply reel arm assembly with late style #160722.

Scratches film

Damper roller or sound drum pressure roller binds.
Rough or worn rails on pressure pad.
Alignment of pressure pad rails with aperture plate rails (Section 5.3.2).
Burrs, nicks, or abrasions on all surfaces over which film passes.

Supply (front) spindle rotates while projector is running forward, without film

Clearance between the sun gear and sprocket and the reversing mechanism internal gear (Section 5.12.3).

Film noise in gate

Excessive amount of pull-through tension (Section 5.3.4).
Clearance of claw in aperture plate slot (Section 5.3.4).

Mechanism noisy - no film in projector

Claw clearance in aperture plate slot (Section 5.3.4).
Claw protrusion (Section 5.18.3).
Claw return spring.
Claw retaining spring.
Pull-down cam.
In-and-out spring.
Shutter shaft bearings and ball bearing retaining screws.
Worm secure on shutter shaft.
Fan clearance in fan housing.
Tightness of fan housing-to-mechanism mounting screws.
Tightness of mechanism-to-case mounting screws.
Speed shifting adjustment (Section 5.22.3).
Motor bearings worn.
Belt damping rollers - "A" serial number projectors - modify projector using Kit #K-1655 (Section 5.17).

Pinging sound in mechanism, especially at silent speed

Drive belt operation.
Speed shifting adjustment (Section 5.22.3).

Motor noisy

Worn motor bearing.

Projector speed incorrect

Motor drive pulley belt and rubber drive slippage caused by oil on belt and/or rubber drive. Replace pulley and/or belt.
"A" serial number projector fit oil catcher #165193 and clip #164853 on end of motor shaft.

2.2 SOUND SYSTEM

No film sound (exciter lamp not lighted)

Exciter lamp connection to power supply.
Power supply.
Exciter lamp.

No film sound (exciter lamp lighted)

Plug in microphone and

1. If no sound through microphone, check amplifier.
2. If sound satisfactory through microphone, check following:
   - Threading of projector
   - Speaker plug contact
   - Speaker cable continuity
   - Sound optics adjustment (Section 5.30.1)
   - Solar cell cable and connection

Excessive hum

Solar cell cable plug connection.

Noise in speaker

Sound drum reverse drive chain (Section 5.11.3).
Projector electrical connections.
Electrical leakage between motor frame and projector or between amplifier and projector.
Fan clearance.
Motor grounding connection.

Microphonics

Seating of the exciter lamp in the socket.
Sound optics adjustment (Section 5.30.1).

Microphonics (microphone plugged in)

Microphone.
Microphone connector.

Weak or distorted sound

Fidelity control adjustment, (see projector instruction book).
Seating of exciter lamp in the socket.
Sound optics assembly and sound optics adjustment, (Section 5.30.1).

Speaker rattles at high sound volume

Speaker coil bottoming.
Speaker cone.

Sound unsteady

Threading of projector.
Damping roller action (Section 5.9.3).
Sound drum binds.
Sound drum reverse drive chain (Section 5.11.3).
Pressure roller action (Section 5.16.3).
Pressure roller tension (Section 5.16.3).
Lower sprocket.
Damping roller spring tension (Section 5.9.3).
Damping fluid in damping bearing cup (Section 5.9.2).

Sound still unsteady after above checks

Sound drum ball bearing roughness.
Binds in sound drum sprocket and pawl assembly.

Fidelity control does not peak

Positioning and adjustment of sound optics assembly - (Section 5.30.1).
Sound optics.

3. SERVICE LUBRICANTS

Available from:

EASTMAN KODAK COMPANY
APPARATUS PARTS SERVICE
ROCHESTER 4, NEW YORK

Or others as indicated:

A&O10-592 - Special Formula Lubricant

A&O61-3619 (CW6782) - Special Formula Lubricant

EK1150 Oil equivalent to:

Sunvis No. 916 (Sun Oil Co.)
Teresso No. 43 (Esso)
Pacemaker 150T (Cities Service)
Harmony "A" (Gulf Oil Co.)
Turbo No. 27 (Shell Oil Co.)

A&O61-3655 (CW8362) - Grease

Plastilube No. 1 (Warren Refining and Chemical Co., Cleveland, Ohio).

A&O61-3664 (CW6092) - Grease

Texaco Unitemp (Texas Co.)

A&O61-3778 - Lubricant - Microfine Molykote

A&O61-3834 - Oil - Lubriplate No. 1 Oil

EK110882 - Fluid

DC No. 200 - 100,000 centistokes (Dow Corning)

NOTE: Lubrication is normally required only when projector is serviced, periodic lubrication is not necessary. For details refer to installation instruction in the section for the particular part or assembly.

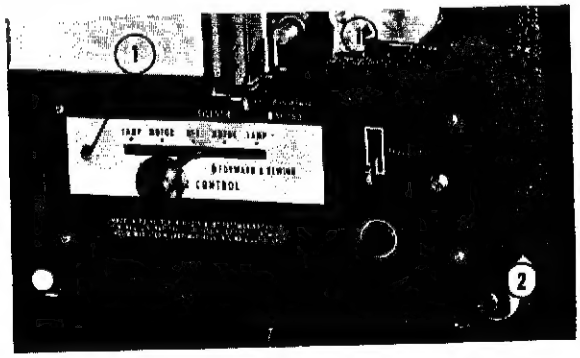
4. SPECIAL TOOLS & TEST FILM

No. 260	-	Spring Tension Scale
No. 1007	-	Claw Depth Gauge
No. 1034	-	Power Supply
No. 760079	-	SMPTE "JIFFY" Test Film
No. 760382	-	6 foot loop - SMPTE 5,000 Cycle Sound Focusing Test Film
No. 760383	-	SMPTE Buzz Track Test Film
No. 760386	-	6 foot loop - SMPTE 400 Cycle Signal Level Test Film
No. 761715	-	25 feet SMPTE Registration Test Film

5. HOW TO

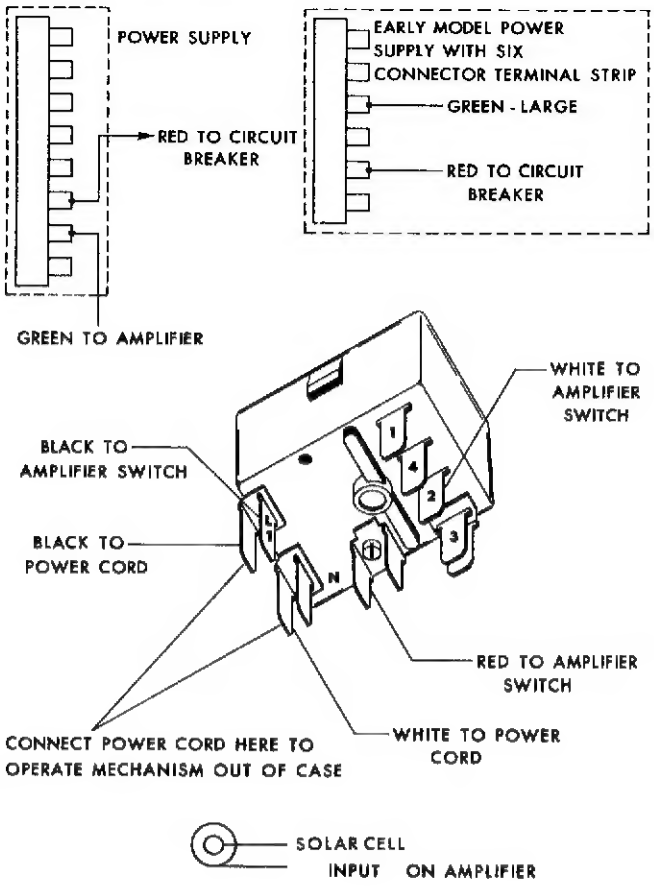
5.1 MECHANISM

5.1.1 Remove

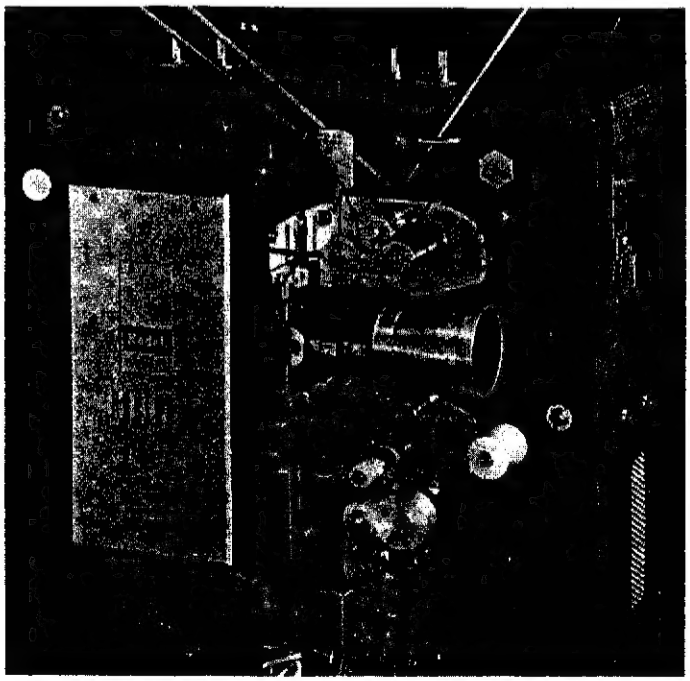


a) Two screws (1), screw and spacer (2), control knob (setscrew), than take off exciter lamp cover.
b) Cord compartment baffle (2 screws).
c) Mechanism support bracket located beneath the baffle (2 screws in case back). - (continued)

5.1.1 Remove Mechanism (continued)



d) Leads shown in drawing.
e) Screw on bottom of case.



f) Four screws (arrows) and lift mechanism out of case.
g) Support post, to stand mechanism upright.

5.1.2 Install

Mechanism in reverse order of removal. Lubricate the film guide roller shafts on the exciter lamp cover with EK1150 Oil as required.

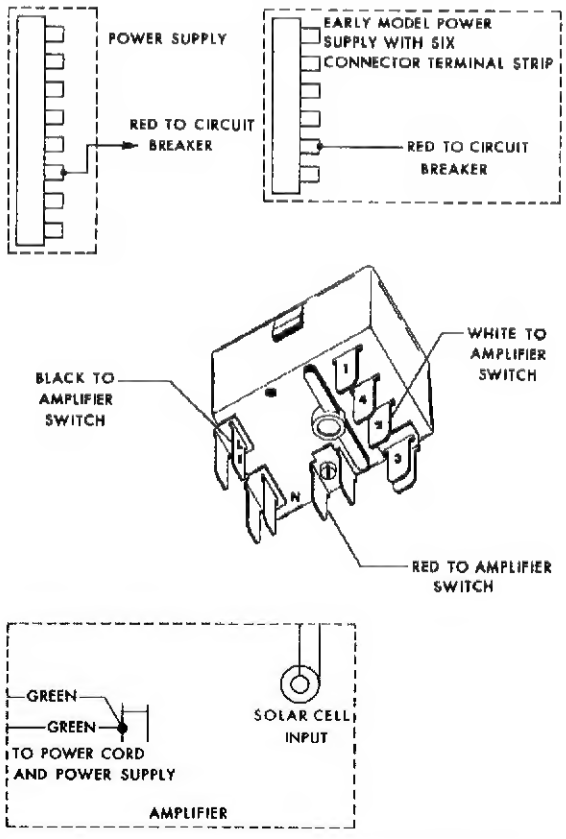
5.2 AMPLIFIER

5.2.1 Remove

a) Exciter lamp cover and cord compartment baffle, (Section 5.1.1).
b) Solar cell plug from jack.

c) Four amplifier mounting screws (arrows).
d) Amplifier from case - manipulate wires as needed.

NOTE: Amplifier can now be operated and tested.



e) Leads shown in drawing to completely remove amplifier from case.

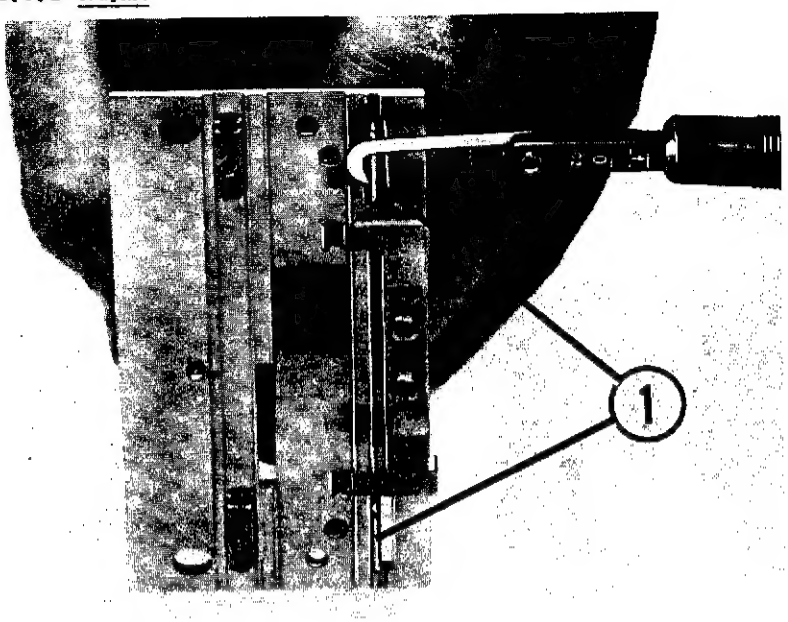
5.2.2 Install - amplifier in reverse order of removal.

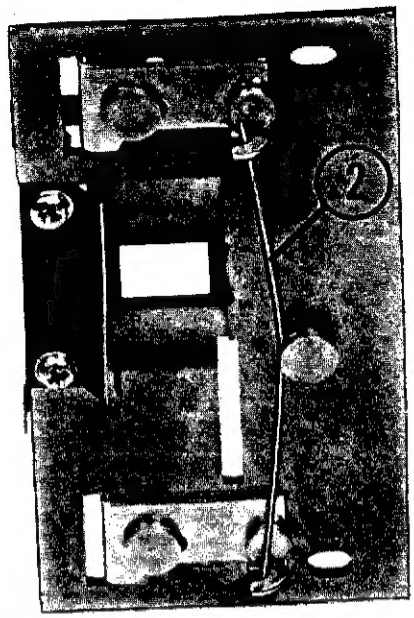
5.3 APERTURE PLATE AND PRESSURE PAD ASSEMBLY

5.3.1 Remove

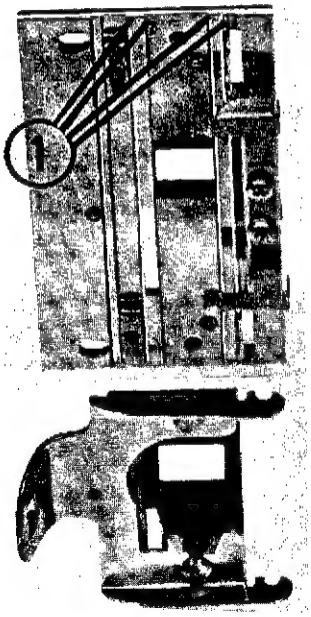
a) Pressure pad.
b) Aperture plate (2 screws).

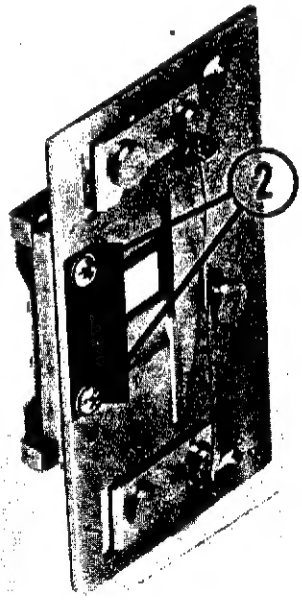
5.3.2 Adjust





a) Pressure of movable side guides (1) between 1 and 1½ ounces by bending spring (2).





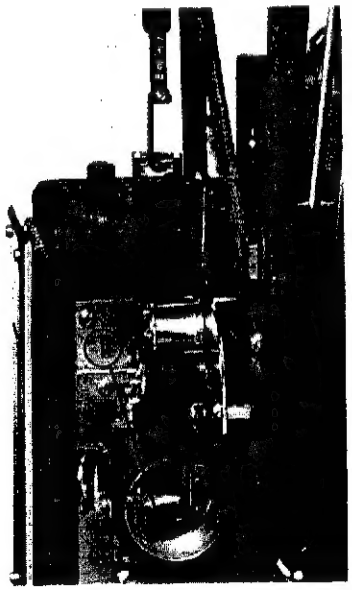
b) Pressure pad rails to align with aperture plate rails (1); if necessary, loosen screws (2) to re-position pressure pad.

5.3.3 Install - parts in reverse order of removal.

5.3.4 Adjust

a) Clearance of pull-down claw in aperture plate slot as follows:

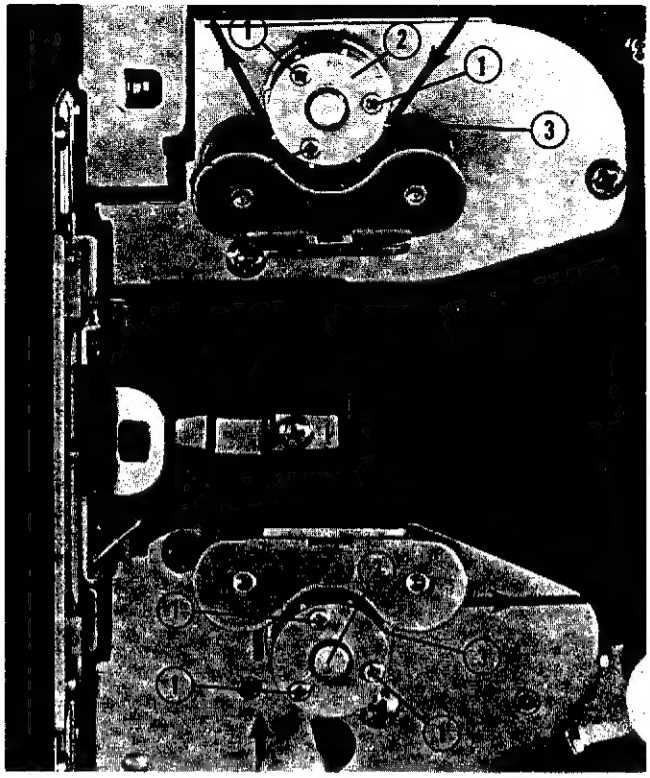
Place a strip of film in the gate. Turn the threading knob and observe the claw action with the framing knob turned to the extreme clockwise position and then to the extreme counterclockwise position. If either claw point strikes either side of the film perforations or the claw slot, loosen the two aperture plate screws and re-position the plate.



b) Pull-through tension (between 1½ and 2½ ounces) with claw retracted, using a strip of processed black-and-white film in the gate. Turn screw (1) clockwise to increase and counterclockwise to decrease. Apply a small amount of air-drying cement to the screw.

5.4 SPROCKETS

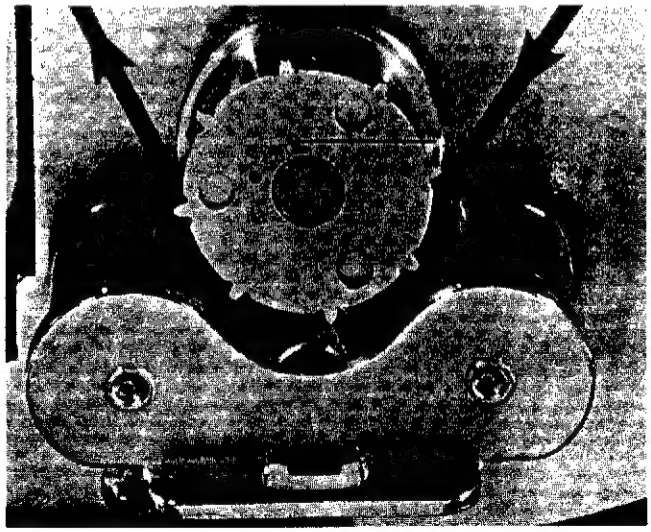
5.4.1 Remove



End plate screws (1), end plate (2), and sprocket (3), note spring behind upper sprocket.

5.4.2 Install (lubricate outside diameter of upper sprocket drive collar with A&O61-3834 Oil).

a) Spring in upper hub with point of spring in the hole of the collar then rotate hub clockwise to the stop and hold in this position

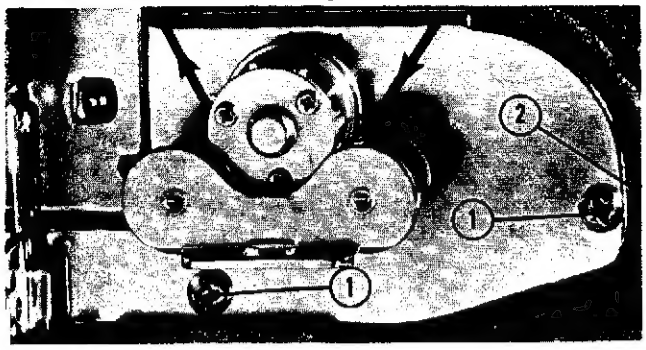


b) Upper sprocket in the hub with the end of the spring engaging hole in sprocket, then rotate sprocket counterclockwise to align screw holes.
c) End plate and screws - end plate should be centered for appearance.
d) Lower sprocket, end plate and screws.

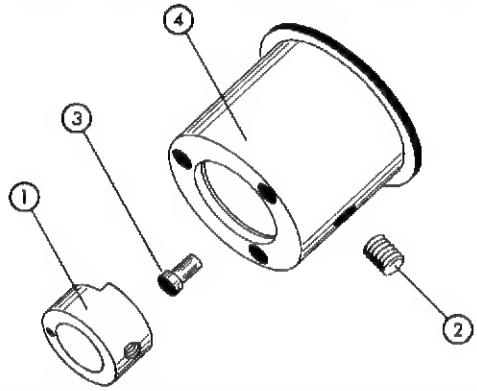
5.5 UPPER SPROCKET HUB

5.5.1 Remove

a) Upper sprocket and spring (Section 5.4.1).



b) The two upper sprocket plate retaining screws (1) and the spacer (2), then lift off the assembly.



c) Collar (1) (by removing setscrew (2) through hub) stud (3) and hub (4).

NOTE: It may be necessary to drive the shaft out in order to remove the collar (1) and hub (4).

5.5.2 Install

a) Hub on shaft, then the stud and collar in the hub so that the cut-out of collar is over the stud.
b) Setscrew in collar and tighten setscrew on cut-out of shaft; no end play.
c) Upper sprocket plate assembly on projector. Be sure belt is in place. Hold assembly firmly in a downward position while installing spacer and screw to insure that take-up belt is properly engaged.
d) Sprocket and spring (Section 5.4.2).

5.6 LOWER SPROCKET HUB

5.6.1 Remove

a) Mechanism from case (Section 5.1.1).
b) Lower sprocket (Section 5.4.1).
c) Hub by removing setscrew and shaft.

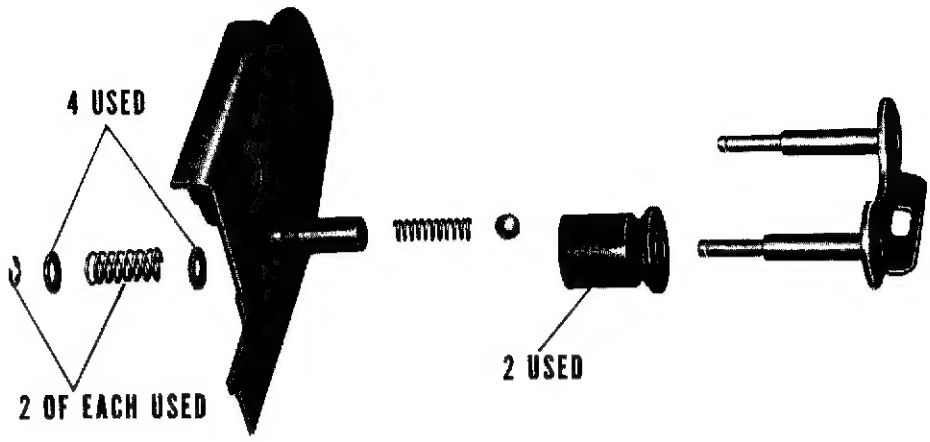
5.6.2 Install

a) Hub on shaft and tighten setscrew on cutout of shaft; no end play.
b) Lower sprocket (Section 5.4.2).
c) Mechanism in case (Section 5.1.2).

5.7 UPPER SPROCKET CLAMP

5.7.1 Remove

a) Upper sprocket clamp (Section 5.5.1.b).



b) Sprocket clamp parts as required.

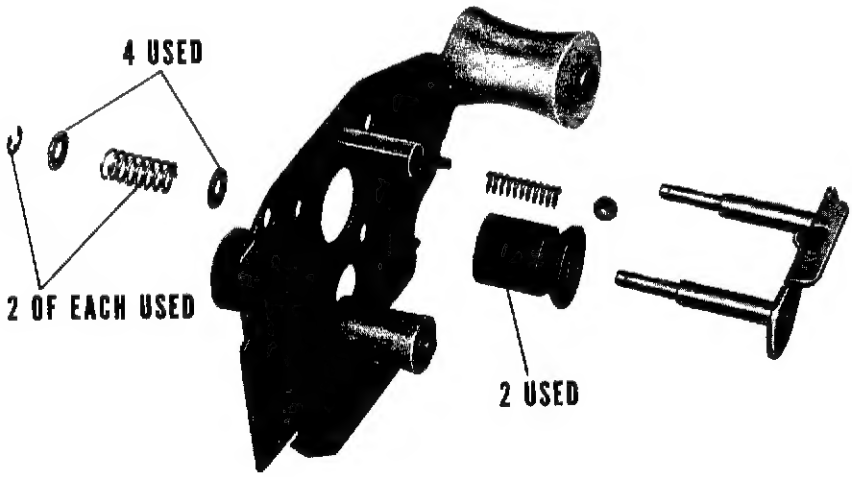
5.7.2 Install parts in reverse order of removal. Lubricate the sprocket guard stop pin ball with EK1150 Oil; the roller shafts with A&O61-3664 Grease and the sprocket shaft with A&O61-3834 Oil.

5.7.3 Adjust sprocket clamp, using two and three thicknesses of film. With clamp closed, rollers should turn freely with two thicknesses of film, but should be snug with three. Carefully bend post on plate to accomplish this.

5.8 LOWER SPROCKET CLAMP

5.8.1 Remove

a) Lower sprocket hub (Section 5.6.1).
b) Lower sprocket plate assembly (2 screws).



c) Sprocket clamp assembly parts as required.

5.8.2 Install parts in reverse order of removal - (Section 5.6.2 for hub installation). Lubricate as follows:

a) Sprocket guard stop ball and idler roller shaft with EK1150 Oil.
b) Sprocket roller shafts and idler arm pivot pin with A&O61-3664 Grease.

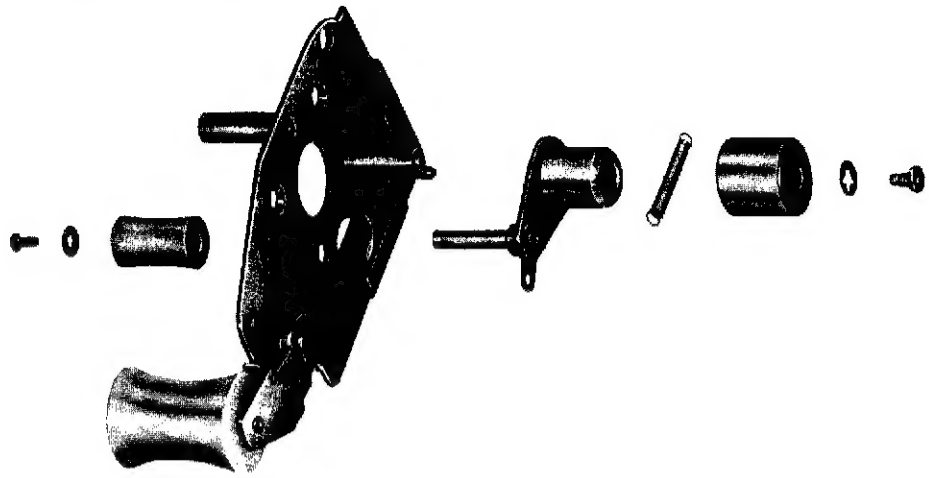
5.8.3 Adjust

Sprocket clamp using two and three thicknesses of film. With clamp closed, rollers should turn freely with two thicknesses of film, but should be snug with three. Loosen screws and move plate assembly to make this adjustment.

5.9 DAMPER ROLLER ARM AND SPRING

5.9.1 Remove

a) Lower sprocket clamp (Section 5.8.1).



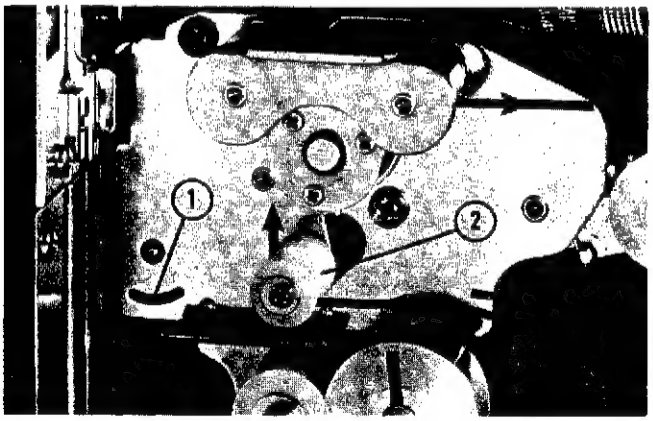
b) Damper roller parts as required.

5.9.2 Install (lubricate roller shaft and bearing with EK1150 Oil, and use EK110882 Fluid as required in bearing cup.)

a) Parts in reverse order of removal - adjustment (Section 5.9.3a) can be made at this point.

b) Lower sprocket clamp on projector (Section 5.8.2) and adjust clamp (Section 5.8.3).

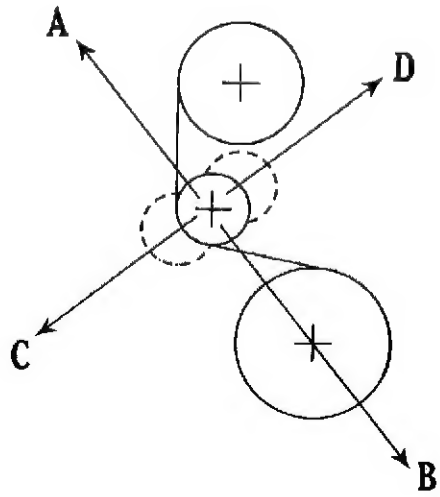
5.9.3 Adjust



a) Tension on damping roller arm, using a small blade screwdriver or scriber through slot (1) to move spring lever. When the damping roller (2) is in the relaxed position, there should be no tension on the damping roller spring.

b) Damping roller arm as follows:

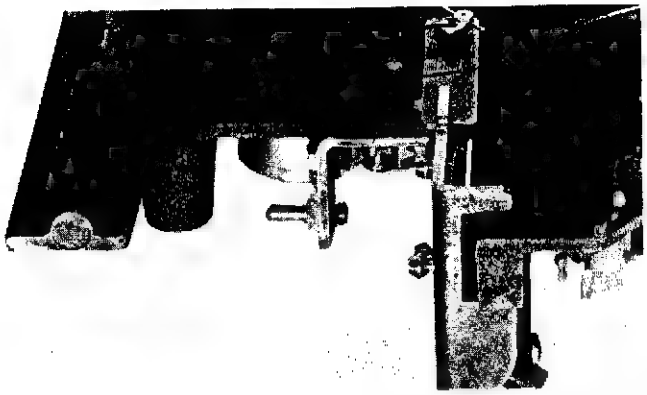
Remove the damping roller retaining screw. Thread the projector for sound, using processed film; turn on the motor and observe the action of the damping roller. A correctly adjusted roller arm will cause the damping roller to work its way off the shaft slowly when the projector is running forward and cause it to work its way on the shaft slowly (toward the sprocket plate) when the projector is running in reverse. If the roller motion is rapid in either direction, it indicates that the roller arm is bent too much and should be straightened till the IN and OUT movement of the roller is slow. Do not bend the roller arm in the direction "C-D"; bend as indicated by "A-B". Replace the damping roller retaining screw.



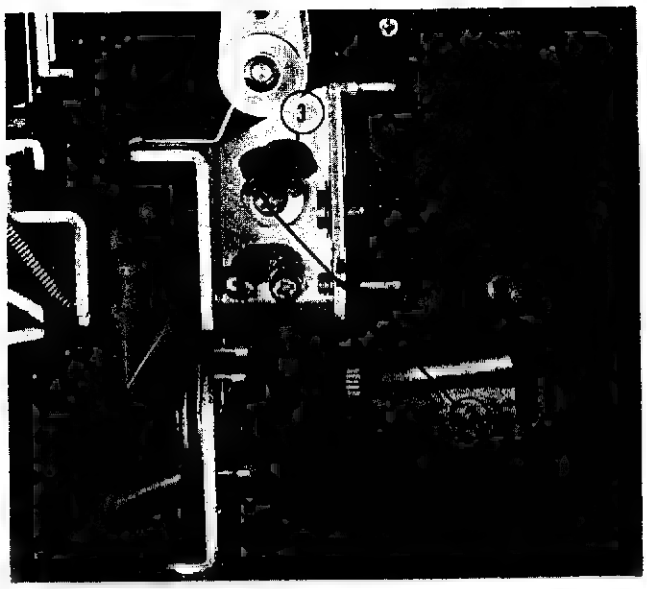
5.10 EXCITER LAMP BRACKET

5.10.1 Remove

a) Mechanism from case (Section 5.1.1).
b) Sound optics by unhooking the mount spring from the bracket assembly.



c) The exciter lamp wire (blue) from the power supply terminal strip. Loosen the sound optics bracket spring screw (1) and move the bracket spring (2) to the side far enough to allow removal of the bracket.



d) Bracket by removing clamp screw (1), eccentric screw (2) and eccentric (3).

5.10.2 Install parts in reverse order of removal.

5.10.3 Adjust centering of scanning beam - see sound system "Optics and Related Area" (Section 5.30.1).

5.11 CHAIN

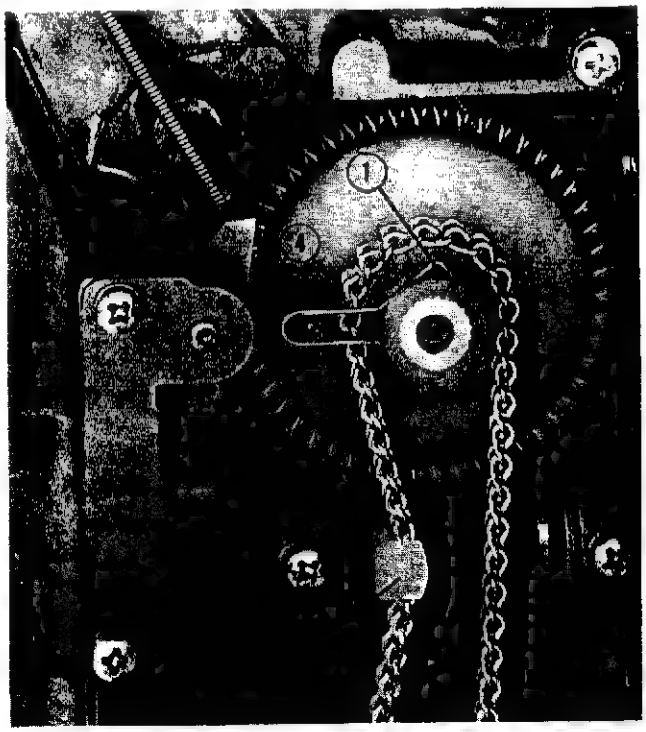
5.11.1 Remove

a) Mechanism from case (Section 5.1.1).
b) Reverse take-up clutch actuator (1).
c) Chain after loosening screw (2) and moving tension adjustment stud (3) to allow sufficient slack in chain to bring it over the sprocket teeth.

5.11.2 Install parts in reverse order of removal. To install a new chain, carefully open a link, place chain on sprockets, close link and replace adjustment stud (3) if previously removed. Lubricate the chain, tension adjusting stud, and reverse take-up clutch bushing (4) with EK1150 Oil.

5.11.3 Adjust

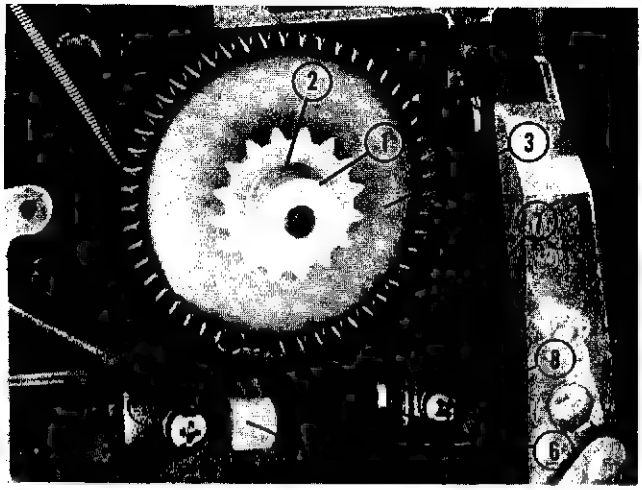
Tension adjustment stud (3) so that there is a slight amount of slack in the chain. Too tight an adjustment will result in "wows" in the sound; too loose a chain will allow it to strike the pivot shaft (5) when the projector is elevated, causing static in the sound.

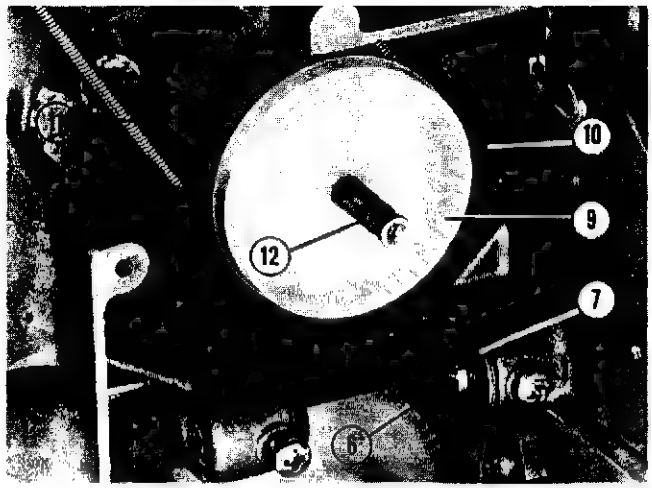


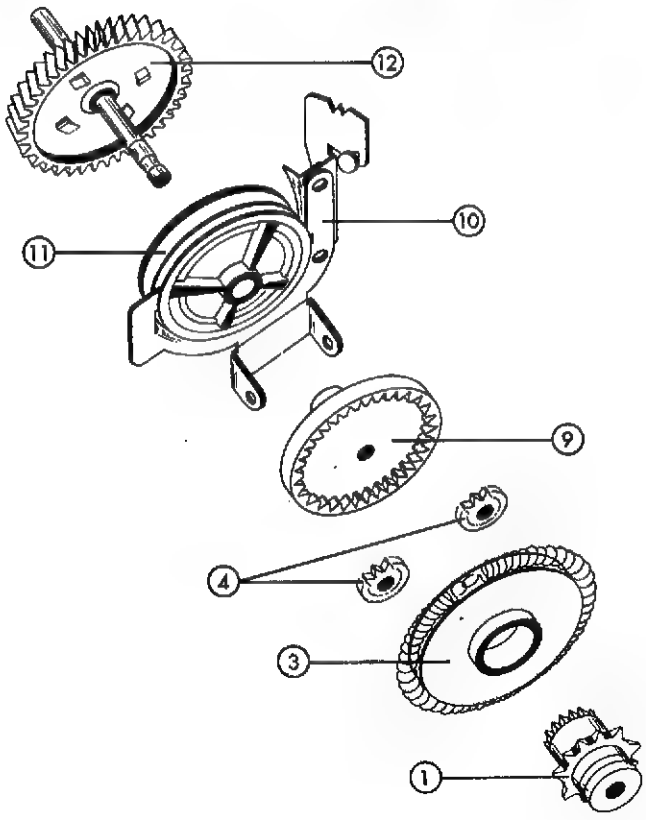
5.12 PLANETARY GEAR ASSEMBLY AND REWIND MECHANISM

5.12.1 Remove

a) Chain (Section 5.11.1).







b) Sun gear (1) by loosening setscrew (2), then spider (3) and planetary gears (4).
c) Adjustment stud (5).
d) Shift plate shaft (6) and spacing washer (7) by loosening screw (8).
e) Reverse mechanism gear (9), shift plate (10) and pulley (11).
f) Sprocket shaft and gear assembly (12), if necessary, by removing sprocket hub (Section 5.5.1).

5.12.2 Install parts in reverse order of removal; lubricate as follows:

a) All gear teeth, and actuator groove on the sun gear (1) with EK1150 Oil.
b) Upper sprocket drive shaft with A&O61-3834 Oil.
c) Rewind shaft lever detent spring and shift plate pivot with A&O61-3619 Lubricant.
d) Tension clutch groove on spider (3) with A&O10-592 Lubricant.

5.12.3 Adjust

Clearance between sun gear and sprocket (1) and the reversing mechanism internal gear (9); this should be established by setting the sun gear and sprocket tightly against the internal gear and then backing the gear off the shaft .015" to .020".

NOTE: Adjust chain (Section 5.11.3) and sprocket clamp (if previously removed Section 5.7.3).

5.13 LOWER SPROCKET GEAR

5.13.1 Remove

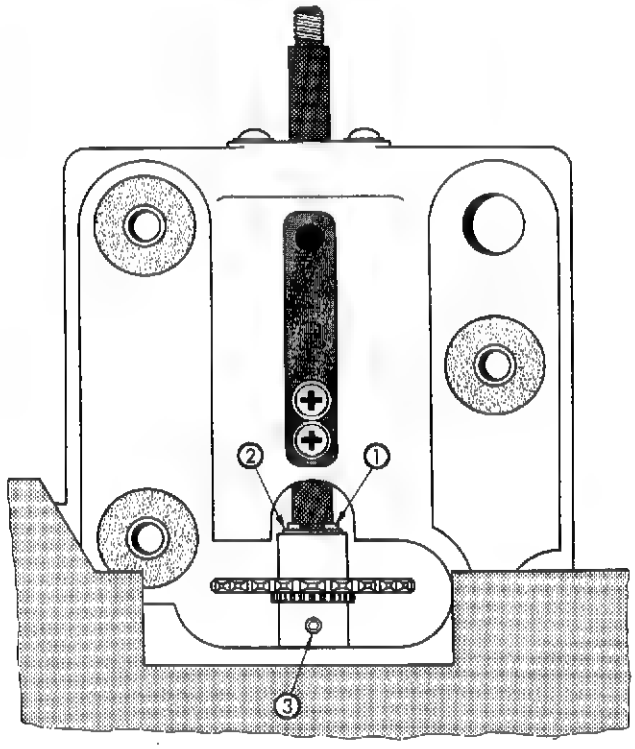
a) Chain (Section 5.11.1).
b) Lower sprocket hub (Section 5.6.1).
c) Lower sprocket gear and shaft.

5.13.2 Install parts in reverse order of removal. Lubricate gear teeth with EK1150 Oil.

5.14 SOUND DRUM AND SPROCKET & PAWL ASSEMBLY

5.14.1 Remove

a) Flywheel and spacer behind flywheel - (Section 5.15.1).



b) Retaining ring (1), note washer (2) between the ring and the sprocket.
c) Sound drum shaft by:

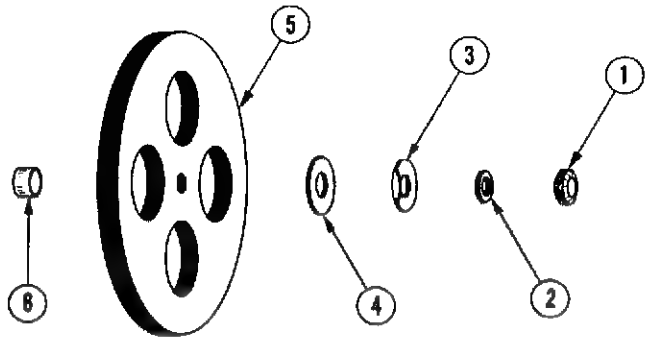
1. Loosening setscrew (3) in ratchet.
2. Holding back on pressure roller while shaft is withdrawn to the second retaining ring.
3. Removing second retaining ring and withdrawing shaft.

5.14.2 Install parts in reverse order of removal. Lubricate the shaft, pawl, and ratchet with EK1150 Oil. Make necessary adjustments to chain (Section 5.11.3) and flywheel (Section 5.15.3).

5.15 FLYWHEEL

5.15.1 Remove

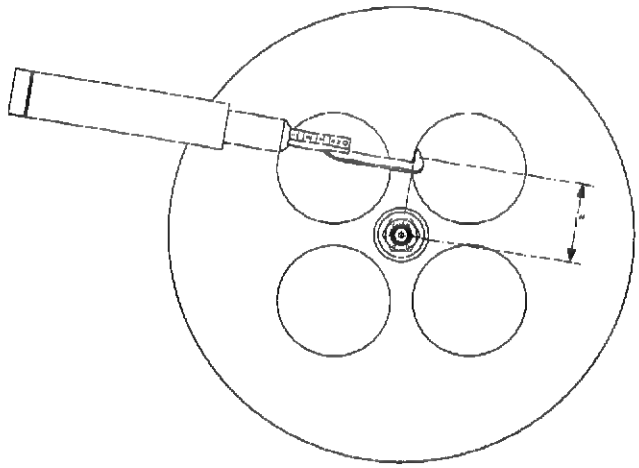
a) Mechanism from case (Section 5.1.1).



b) Flywheel nut (1), (left hand thread), spacer washer (2), spring washer (3) and phenolic washer (4).
c) Flywheel (5) and spacer (6).

5.15.2 Install (lubricate the shaft at the flywheel with A&O61-3619 Lubricant).

a) Spacer (6) and flywheel (5).
b) Phenolic washer (4).
c) Spring washer (3), concave side next to flywheel, spacer washer (2) and nut (1),(left hand thread).



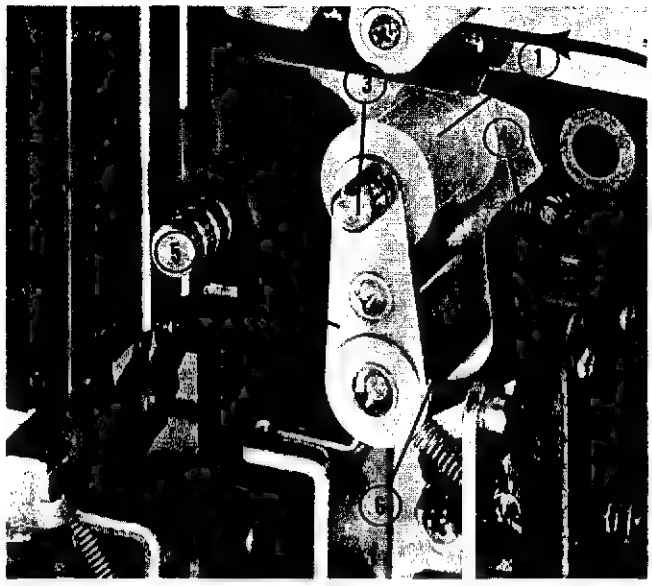
5.15.3 Adjust

Flywheel slipping torque; between 3 and 4 ½ ounce inches. Check by hooking a pull-type spring scale in one of the holes in the flywheel. Keep the axis of the scale at a right angle to a radial line from the center of the flywheel to the point of the contact of the spring scale. Hold the sound drum firmly to prevent shaft from turning and note the tension required to start the flywheel rotating. A correctly adjusted flywheel will require between 3 and 4½ ounces of tension when the torque is measured in this way.

5.16 PRESSURE ROLLER ASSEMBLY

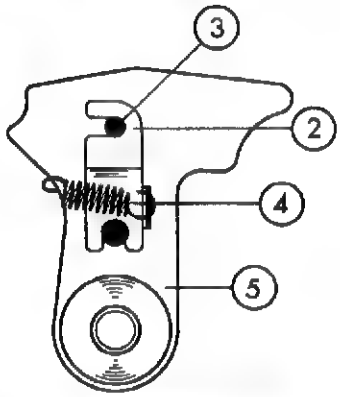
5.16.1 Remove

a) Sound drum (Section 5.14.1).
b) Pressure roller (1) by pushing back on the equalizing link (2) and removing the shaft (3). See illustration of rear view of assembly showing relative position of arm, link, and spring (4).
c) Arm assembly (5) by turning the hexagon spacer (6) counterclockwise.



5.16.2 Install

a) Arm assembly and pressure roller. Apply a light film of A&O61-3664 Grease to the roller shaft and the pivot.
b) Sound drum shaft (temporarily).

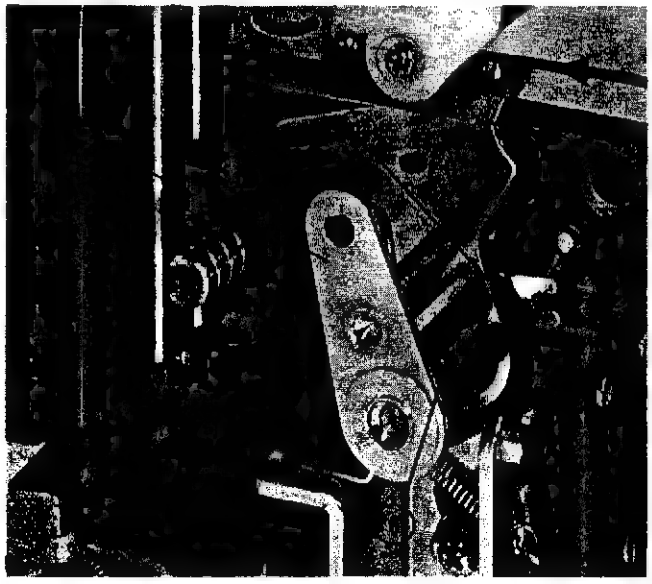


5.16.3 Adjust

Pressure of roller against sound drum, if necessary. The pressure should be 12 to 18 ounces. If too great, stretch spring (4) on equalizing link.

5.16.4 Install

Sound drum shaft, ratchet, sprocket and pawl, and balance of parts in reverse order of removal. Apply a light film of EK1150 Oil to sound drum shaft, ratchet and pawl. Make necessary adjustments to chain (Section 5.11.3) and to flywheel (Section 5.15.3).

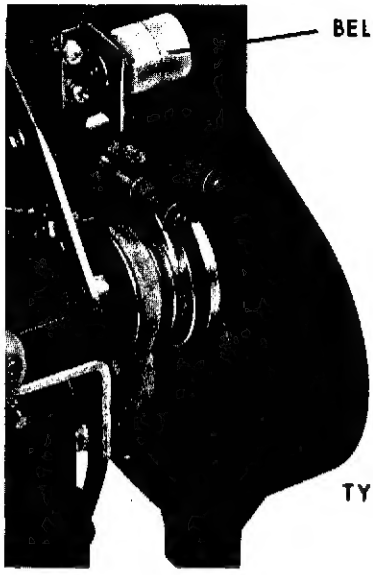


5.16.5 Adjust

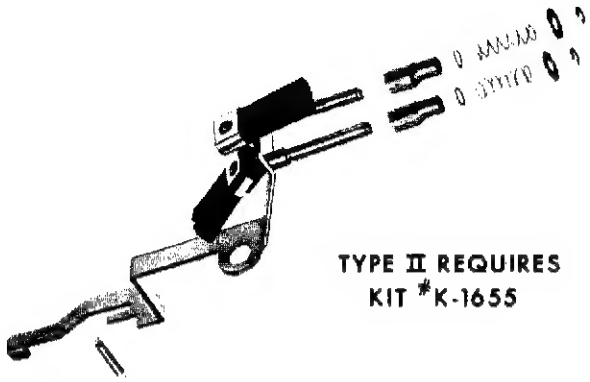
Position of pressure roller, using buzz track test film, (Section 5.30.1 b).

5.17 SHUTTER DRIVE BELT

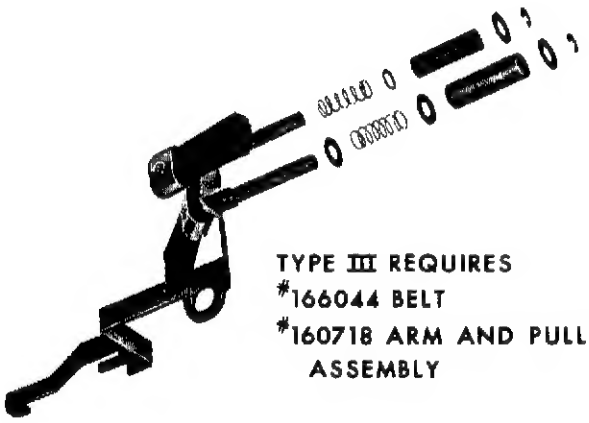
The belt shifting rollers and belt damping systems vary on these projectors and since the new belt requires a different shutter drive pulley and no damping it is necessary to modify the older style projectors. This modification, as well as the parts required, varies depending upon the style used in the projector.



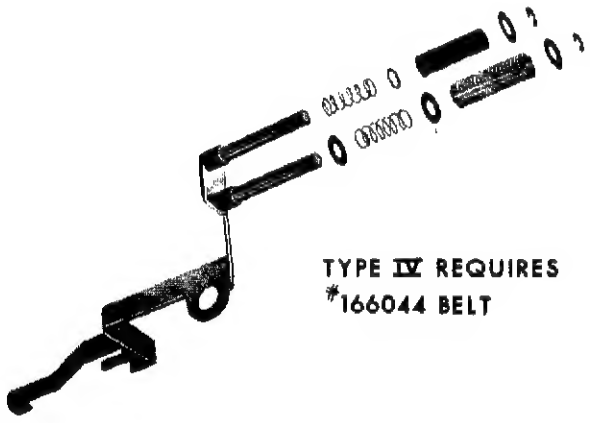
TYPE I REQUIRES
KIT #K-1655



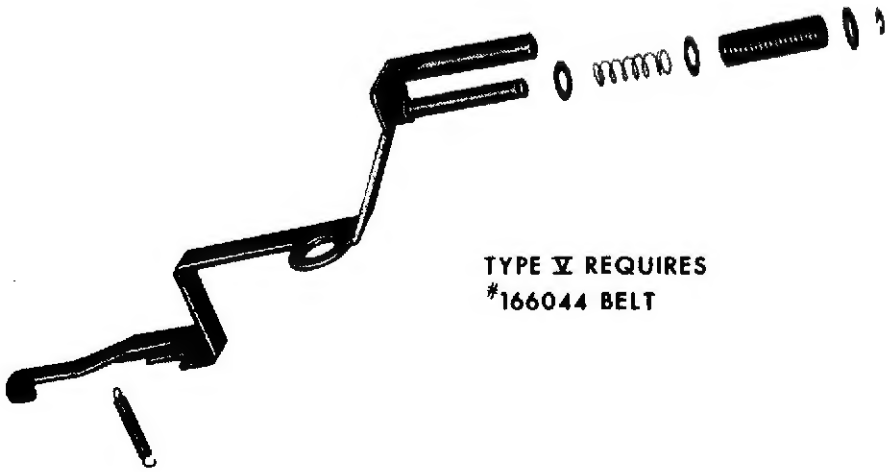
TYPE II REQUIRES
KIT #K-1655



TYPE III REQUIRES
#166044 BELT
#160718 ARM AND PULLEY
ASSEMBLY



TYPE IV REQUIRES
#166044 BELT



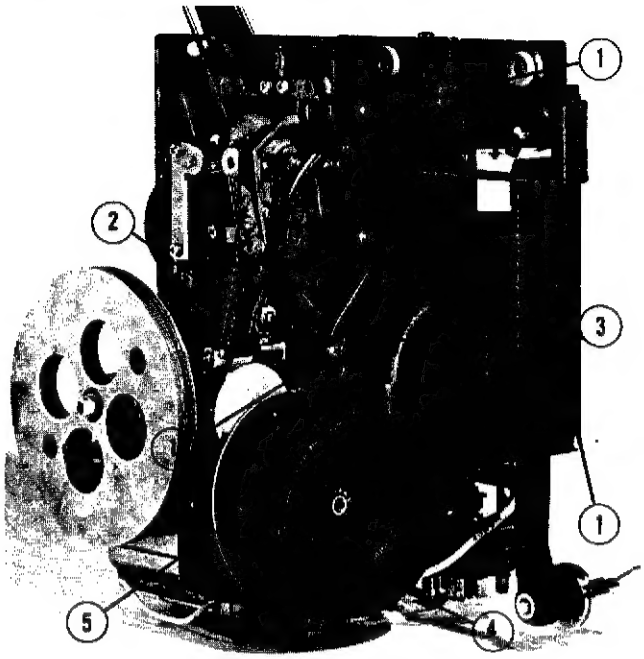
TYPE V REQUIRES
#166044 BELT

(continued)

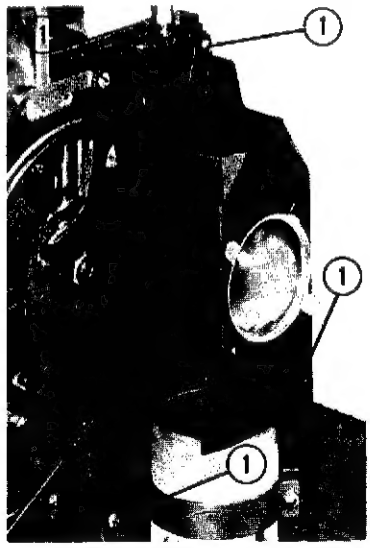
5.17 SHUTTER DRIVE BELT (Continued)

5.17.1 Remove

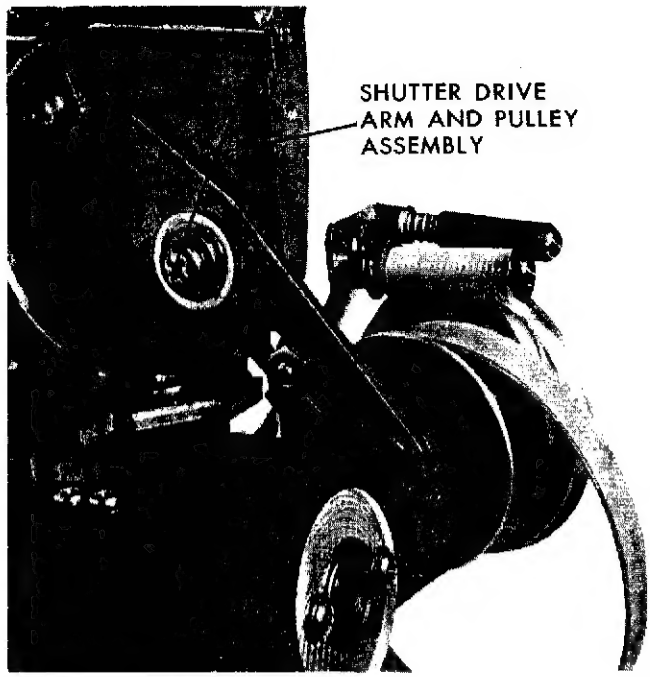
a) Mechanism from case (Section 5.1.1).
b) Lamphouse cover and projection lamp.



c) Three fan housing screws (1), the spacer (2), and lockwasher. (Power supply has been removed for illustration only).
d) Fan housing (4) and fan by loosening fan setscrew through access hole (5).



e) Lamp chimney by removing the four screws (1).
f) Drive belt.



g) Type I

1. Remove and discard the shutter drive arm and pulley assembly by disconnecting the link (1) and removing the two mounting screws (2).
2. Remove and discard the two eccentric belt shifting rollers.
3. Remove and discard the two belt damping rollers. One located on the fan housing cover plate, the other on the mechanism casting.

h) Type II

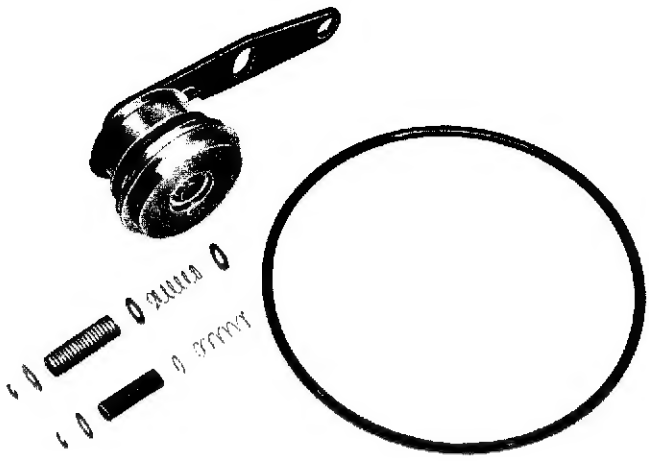
1. Remove and discard the shutter drive arm and pulley assembly by disconnecting the link (1) and removing the two mounting screws (2).
2. Remove and discard the two eccentric belt shifting rollers.
3. Remove and discard the two belt damping brushes. Some of the brushes are held on with screws; others are riveted and will have to be broken off without damaging the roller shafts.

i) Type III

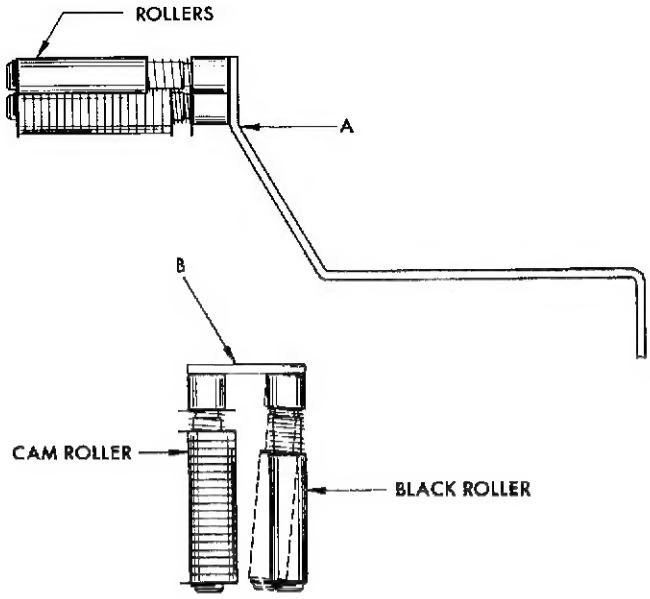
1. Remove and discard the shutter drive arm and pulley assembly by disconnecting the link (1) and removing the two mounting screws (2).
2. Remove and discard the two belt damping brushes. Some of the brushes are held on with screws, others are riveted and will have to be broken off without damaging the roller shafts.

j) Types IV and V

No further disassembly necessary.



KIT #K-1655 SHUTTER DRIVE BELT AND SHIFTING ROLLER KIT



USE WITH STRAIGHT ROLLER 126200

USE WITH ECCENTRIC ROLLER 153360

5.17.2 Install

a) Types I, II, and III - new shutter drive arm and pulley assembly #160718.
b) Types I and II - new rollers #153360 and #126200. (Extra springs and washers provided in Kit #K-1655, in case of loss or damage while removing original parts). Note coil direction of springs.
c) All Types - new shutter drive belt.

5.17.3 Adjust speed shifting, Types I, II, and III as follows:

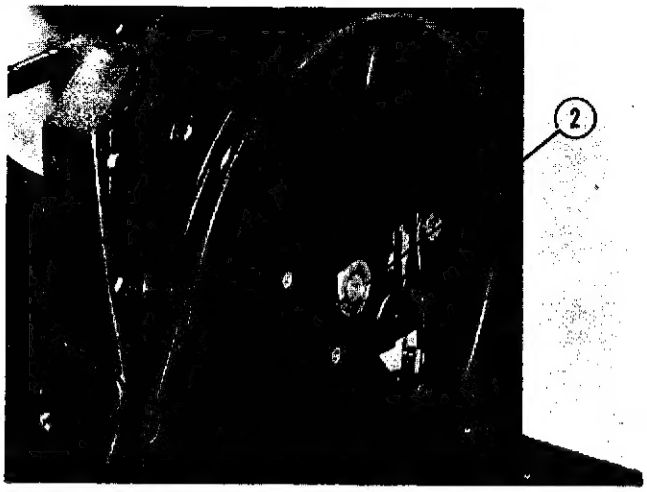
a) Bend bracket down at "A" so that rollers just clear pulley.
b) With shifting lever in sound speed and belt on high side of pulley, bend bracket at "B" so that black roller barely clears the belt.
c) With shifting lever in silent position and belt on low side of pulley, bend bracket at "B" so that eccentric roller clears belt by .010"-.020" when high side of eccentric is away from belt.
d) When adjusted correctly, shifting can be accomplished while rotating the mechanism by hand.
e) Types IV and V should normally require no adjustments, but if required, follow the above procedure.

5.17.4 Install

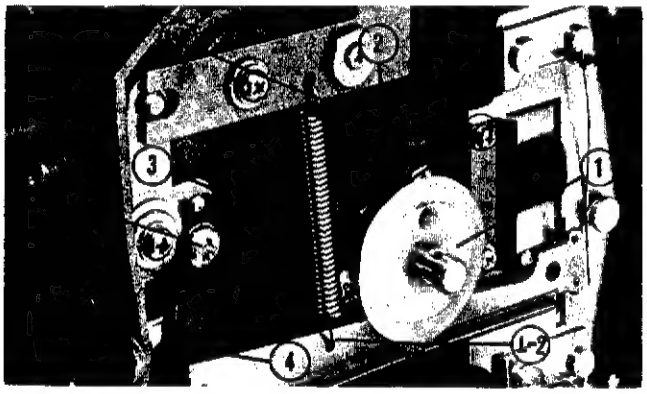
Balance of parts to projector and fit into the case.

5.18 PULL DOWN MECHANISM

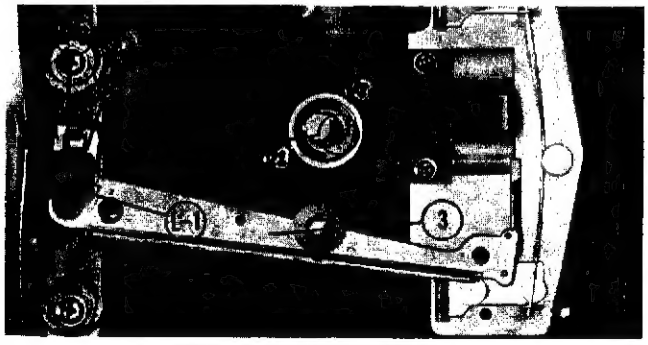
5.18.1 Remove



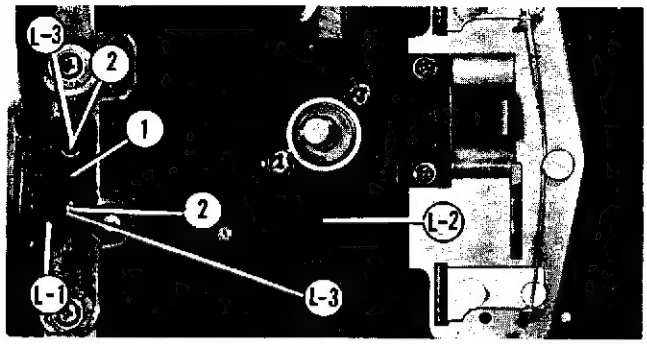
a) Drive belt (1) (Section 5.17.1 a thru f), shutter shaft nut (2) (left hand thread), and washer.
b) Super-40 shutter - see Section 5.19 for detailed service information.



c) In-and-out cam (1), and up-and-down cam (2) - note shim washers behind the up-and-down cam.
d) Claw return spring (3).
e) Retaining spring (4) by removing screw (5).



f) Pad (1), ball (2), and pull-down claw (3).



g) Pad (1), balls (2).

5.18.2 Install

a) Pull-down parts in reverse order of removal, applying lubricants as follows (see preceding illustrations):

L-1 EK1150 Oil - moisten both pads - light film on surface of up-and-down cam.

L-2 A&O61-3655 Grease - contact points of return spring with framing lever and claw assembly. Little on in-and-out spring, where small button on claw assembly bears against the spring.

L-3 A&O61-3619 Lubricant - small amount on three pivot balls and in ball recesses.

b) Super-40 shutter temporarily. Make sure that timing lug of shutter is in the aligned holes of the cam. (See Section 5.19 for detailed service information on Super-40 Shutter).

5.18.3 Adjust

a) Claw clearance (Section 5.3.4a).
b) Claw protrusion. The top claw should extend through the film perforation, but not so far that it strikes the frame of the pressure pad assembly on the pull-down stroke or touches the film on the return stroke. (Factory adjustment is .030" - .045" beyond aperture plate rails.) Correct, if necessary, by changing the total thickness of claw shim washers.

5.18.4 Install

a) Super-40 shutter finally. The fixed blade of the shutter should be away from the aperture when the line on the threading knob is towards the operator. (See Section 5.19 for detailed service information on Super-40 Shutter).
b) Balance of components in reverse order of removal.